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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.
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09/216,246 12/18/98 ZANK

A 12580

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EXAMINER

DASTOURI, M

ART UNIT

PAPER NUMBER

2723

DATE MAILED:

07/26/00

Please find below and/or attached an Office communication concerning this application or proceeding.

Commissioner of Patents and Trademarks

Office Action Summary

Application No.
09/216,246

Applicant(s)
Zank et al

Examiner
Mehrdad Dastouri

Group Art Unit
2723



- ☐ Responsive to communication(s) filed on _____.
- ☐ This action is **FINAL**.
- ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11; 453 O.G. 213.

A shortened statutory period for response to this action is set to expire Three month(s), or thirty days, whichever is longer, from the mailing date of this communication. Failure to respond within the period for response will cause the application to become abandoned. (35 U.S.C. § 133). Extensions of time may be obtained under the provisions of 37 CFR 1.136(a).

Disposition of Claims

- ☒ Claim(s) 1-30 is/are pending in the application.
- Of the above, claim(s) _____ is/are withdrawn from consideration.
- ☐ Claim(s) _____ is/are allowed.
- ☒ Claim(s) 1-30 is/are rejected.
- ☐ Claim(s) _____ is/are objected to.
- ☐ Claims _____ are subject to restriction or election requirement.

Application Papers

- ☒ See the attached Notice of Draftsperson's Patent Drawing Review, PTO-948.
- ☐ The drawing(s) filed on _____ is/are objected to by the Examiner.
- ☐ The proposed drawing correction, filed on _____ is ☐ approved ☐ disapproved.
- ☐ The specification is objected to by the Examiner.
- ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. § 119

- ☐ Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d).
- ☐ All ☐ Some* ☐ None of the CERTIFIED copies of the priority documents have been
- ☐ received.
- ☐ received in Application No. (Series Code/Serial Number) _____.
- ☐ received in this national stage application from the International Bureau (PCT Rule 17.2(a)).
- *Certified copies not received: _____.
- ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).

Attachment(s)

- ☒ Notice of References Cited, PTO-892
- ☒ Information Disclosure Statement(s), PTO-1449, Paper No(s). 5
- ☐ Interview Summary, PTO-413
- ☒ Notice of Draftsperson's Patent Drawing Review, PTO-948
- ☐ Notice of Informal Patent Application, PTO-152

--- SEE OFFICE ACTION ON THE FOLLOWING PAGES ---

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DETAILED ACTION

Oath/Declaration

1. The oath or declaration is defective. A new oath or declaration in compliance with 37 CFR 1.67(a) identifying this application by application number and filing date is required. See MPEP §§ 602.01 and 602.02.

The oath or declaration is defective because:

The clause regarding "willful false statements ..." required by 37 CFR 1.68 has been omitted.

Specification

2. The disclosure is objected to because of the following informalities:
3. Applicant is reminded of the proper language and format for an abstract of the disclosure. The abstract should be in narrative form and generally limited to a single paragraph within the range of 50 to 250 words. It is important that the abstract not exceed 250 words in length since the space provided for the abstract on the computer tape used by the printer is limited.

Claim Objections

4. Claims 13 and 18 are objected for the following informalities:

In Line 8 of Claim 13, "for for" should be corrected to "for". In Line 1 of Claim 18, "The method system" should be corrected to "The method".

Appropriate correction is required.

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Claim Rejections - 35 USC § 102

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

6. Claims 1-4 are rejected under 35 U.S.C. 102(b) as being anticipated by Beatson et al (U.S. 5,892,824).

Regarding Claim 1, Beatson et al disclose a system for managing handwritten signatures, comprising:

- (a) a graphic tablet for signaling position coordinates of a stylus during manual movement thereof relative to a writing surface (Figure 2, Signature tablet 64; Column 10, Lines 12-14; Column 17, Lines 25-31);
- (b) a clock circuit for periodically initiating position measurements by the graphic tablet at predetermined fixed time intervals (Column 12, Lines 34-43; Figure 5, Oscillator 222; Column 13, Lines 56-57);
- (c) a first computer processor electrically interfaced with the tablet, the processor being programmed for receiving a multiplicity of the coordinates during the manual movement of the stylus, and storing respective sets of the coordinates in sequential order as an electronic signature while preserving a time relation between coordinates, the electronic signature forming a

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time history of the stylus movement (Figure 5, Microprocessor 200; Column 12, Lines 45-53);
and

(d) means for verifying the fixed time intervals of the measurements (Figure 5, Reference frequency Conditioning, Digitizer 218; Column 13, Lines 47-61).

Regarding Claim 2, Beatson et al further disclose the system of Claim 1, further comprising

means for comparing the electronic signature with a reference signature (Figure 8F; Column 17, Lines 21-24).

Regarding Claim 3, Beatson et al further disclose the system of Claim 2, wherein the means for comparing comprises reference memory for storing an electronic counterpart of the reference signature, and a cross-correlator for evaluating a degree of correspondence between respective time histories of the electronic signature and the electronic counterpart of the reference signature (Figure 8F; Column 17, Lines 35-61; Figure 9; Column 18, Lines 7-18).

Regarding Claim 4, Beatson et al further disclose the system of claim 3, wherein the reference memory is electronically interfaced with the first computer processor (Figure 5, Memory Card 66; Column 12, Lines 62-67, Column 13, Lines 1-4. Memory Card 61 is electrically interfaced with Microprocessor 200).

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7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. Claims 5 and 28 are rejected under 35 U.S.C. 103(a) as being unpatentable over Beatson et al (U.S. 5,892,824) in view of Moore (U.S. 5,909,500) and Haneda et al (U.S. 5,698,822).

Regarding Claim 5, Beatson et al do not disclose the system of Claim 2, wherein the means for comparing comprises the computer processor having a graphic display implemented for simultaneously displaying the electronic signature and the reference signature with corresponding cursors being positioned along a line segment of the signature and oriented perpendicular to the line segment, and the computer being further implemented for moving the cursors in response to operator input. Moore et al disclose a method for detecting signatures wherein the means for comparing comprises the computer processor having a graphic display implemented for simultaneously displaying the electronic signature and the reference signature (Column 1, Lines 48-55). It would have been obvious to a person of ordinary skill in the art at the time the invention was made to modify Beatson et al invention according to the teachings of Moore to compare the signatures comprising the computer processor having a graphic display implemented for simultaneously displaying the electronic signature and the reference signature because it will provide more accurate signature authentication results. Neither Beatson et al nor Moore disclose

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a system for managing handwritten signatures wherein computer assisted signature verification has been implemented with corresponding cursors being positioned along a line segment of the signature and oriented perpendicular to the line segment, and the computer being further implemented for moving the cursors in response to operator input. Haneda et al disclose input/display apparatus for editing inputted handwritten characters comprising cursors being positioned along a line segment of the signature and oriented perpendicular to the line segment, and the computer being further implemented for moving the cursors in response to operator input (Figures 2, 3A-D; Column 10, Lines 49-67, Column 11, Lines 1-7). It would have been obvious to a person of ordinary skill in the art at the time the invention was made to modify Beatson et al and Moore combination according to the teachings of Haneda et al to perform computer assisted signature verification with corresponding cursors being positioned along a line segment of the signature and oriented perpendicular to the line segment, and the computer being further implemented for moving the cursors in response to operator input because it will facilitate comparison of signature by means of operator intervention.

With regards to Claim 28, arguments analogous to those presented for Claims 1 and 5 are applicable to Claim 28.

9. Claims 6-8, 14-17 and 25-27 are rejected under 35 U.S.C. 103(a) as being unpatentable over Beatson et al (U.S. 5,892,824) in view of Romney et al (U.S. 5,872,848).

Regarding Claim 6, Beatson et al do not disclose the system of Claim 1, wherein the electronic signature has associated therewith a date and time of the handwritten signature.

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Romney et al disclose a method for witnessed authentication of electronic documents wherein the electronic signature has associated therewith a date and time of the handwritten signature (Figure 9-2; Column 10, Lines 4-12). It would have been obvious to a person of ordinary skill in the art at the time the invention was made to modify Beatson et al invention according to the teachings of Romney et al to associate a date and time of the handwritten signature because identifying time and date of electronic signatures will improve confidence level for authentication purposes.

Regarding Claim 7, Romney et al further disclose the system of Claim 6, wherein the electronic signature has further associated therewith an annotation including at least one of a geographic location, a physical address, and an identification string (Figure 9-2; Column 10, Lines 4-12. Drivers License Identification Number is the identification string associated with the electronic signature.).

Regarding Claim 8, Romney et al further disclose the system of Claim 1, wherein the first computer processor is a digital processor, and the electronic signature is a digital signature (Figure 1; Column 5, Lines 5-10).

Regarding Claim 14, Romney et al further disclose the method of Claim 1, wherein the computer is further programmed for encrypting the time history to a fixed key of arbitrary length (Column 2, Lines 62-65. Time history is the sequence of data obtained from the stylus movement.), the stored electronic signature being in encrypted form (Column 7, Lines 9-13).

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Regarding Claim 15, Romney et al further disclose the method of Claim 14, wherein the computer is programmed for generating the key as a cryptographic hash function or message digest of the document (Column 2, Lines 62-65).

Regarding Claim 16, Beatson et al disclose a method for electronically signing a document, comprising the steps of:

(a) progressively capturing a handwritten signature as an ordered sequence of data corresponding to successive coordinates and corresponding timing of stylus movement producing the signature (Figure 5; Column 12, Lines 34-44);

(b) storing the data as an electronic signature (Figure 5; Column 12, Lines 43-44). Beatson et al disclose a method for electronically signing a document (Figure 4C) but do not explicitly disclose

(c) electronically binding the electronic signature to a stored counterpart of the document.

Romney et al disclose a method for witnessed authentication of electronic documents wherein the electronic signature is electronically bound to a stored counterpart of the document (Figure 2, Step 260; Column 7, Lines 44-57; Figure 6. Digital signature 640 is bound to a copy 620 of original document 400.). It would have been obvious to a person of ordinary skill in the art at the time the invention was made to modify Beatson et al invention according to the teachings of Romney et al to electronically bind the electronic signature to a stored counterpart of the document because it will provide a secure system for authentication of documents.

Regarding Claim 17, Romney et al further disclose the method of Claim 16, wherein the step of binding comprises the further steps of:

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- (a) creating an encryption key by generating a cryptographic hash function or message digest of the stored counterpart of the document (Column 2, Lines 62-65; Column 8, Lines 34-39); and
- (b) encrypting the electronic signature to the encryption key (Column 3, Lines 3-10; Column 8, Lines 39-45).

Regarding Claim 25, Beatson et al disclose a method for electronically signing a document, comprising the steps of:

- (a) capturing a handwritten signature as a sequence of data corresponding to coordinates of stylus movement producing the signature (Figure 5; Column 12, Lines 34-44);
- (b) storing the data as an electronic signature (Figure 5; Column 12, Lines 43-44). Beatson et al disclose a method for electronically signing a document (Figure 4C) but do not explicitly disclose
- (c) creating a signature receipt as a cryptographic hash function or message digest of the electronic signature;
- (d) creating a document receipt as a cryptographic hash function or message digest of a stored counterpart of the document; and
- (e) producing counterparts of the signature and document receipts.

Romney et al disclose a method for witnessed authentication of electronic documents including the steps of:

- (c) creating a signature receipt as a cryptographic hash function or message digest of the electronic signature (Figure 2, Steps 200-220 and 260; Column 7, Lines 44-57);
- (d) creating a document receipt as a cryptographic hash function or message digest of a stored

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counterpart of the document (Figure 2, Steps 200-220; Column 6, Lines 63-67, Column 7, Lines 1-13) and

(e) producing counterparts of the signature and document receipts (Figures 9-1 to 9-3; Column 9, Lines 37-60). It would have been obvious to a person of ordinary skill in the art at the time the invention was made to modify Beatson et al invention according to the teachings of Romney et al to implement further steps (c) to (e) because it will provide a secure system for authentication of documents.

Regarding Claim 26, Romney et al further disclose the method of Claim 25, comprising the further steps of:

- (a) embedding the signature receipt into the document (Figure 2, Steps 200-220 and 260; Column 7, Lines 44-57); and
- (b) embedding the document receipt into the electronic signature, thereby to form a cross-linked binding of the signature with the document (Figures 9-1 to 9-3; Column 9, Lines 37-60)..

Regarding Claim 27, Romney et al further disclose method of claim 25, wherein the step of producing the receipt counterparts comprises the further steps of:

- (a) providing a transportable file medium (Column 7, Lines 13);
- (b) copying counterparts of the document receipt and the signature receipt on the file medium (Figure 2, Steps 270-280; Column 9, Lines 30-40); and
- (c) delivering the file medium having the receipt counterparts to a signer of the document (Figure 2, Steps 285 and 290; Column 11, Lines 26-47).

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10. Claims 18-24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Beatson et al (U.S. 5,892,824) further in view of Romney et al (U.S. 5,872,848) and Matyas et al (U.S. 4,941,176).

Regarding Claim 18, neither Beatson et al nor Romney et al explicitly disclose the method of Claim 17, comprising the further steps of identifying stored instances of the encryption key and erasing each such instance. Matyas et al disclose a secure management of keys comprising identifying stored instances of the encryption key and erasing each such instance (Figure 75; Column 115, Lines 1-18). It would have been obvious to a person of ordinary skill in the art at the time the invention was made to modify Beatson et al and Romney et al combination according to the teachings of Matyas et al to identify stored instances of the encryption key and erasing each such instance because these are the essential steps required for maintaining a secure system for authentication of documents.

With regards to Claim 19, arguments analogous to those presented for Claims 16-18 are applicable to Claim 19.

Regarding Claim 20, Romney et al further disclose the method of Claim 19, wherein the step of storing comprises the further steps of:

- (a) encrypting the sequence of data to a fixed key of arbitrary length (Column 2, Lines 62-65);
- and
- (b) storing the encrypted sequence as the electronic signature (Column 7, Lines 9-13).

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Regarding Claim 21, Romney et al further disclose the method of Claim 19, wherein the step of storing comprises the further steps of:

- (a) determining a date and time at which the handwritten signature was produced (Figure 9-2; Column 10, Lines 6-11);
- (b) including counterparts of the date and time with the electronic signature (Figure 9-2; Column 10, Lines 11-12).

Regarding Claim 22, Romney et al further disclose the method of Claim 21, wherein the step of storing comprises the further steps of:

- (a) determining a set of document data associated with the document (Figure 9-2; Statements 921-924; Column 10, Lines 4-18);
- (b) generating a cryptographic hash data string of arbitrary length from the document data (Column 2, Lines 62-65; Column 11, Lines 1-5); and
- (c) encrypting the electronic signature using the cryptographic hash data string (Column 11, Lines 15-20).

Regarding Claim 23, Romney et al further disclose the method of Claim 19, comprising the further step of electronically tying the encrypted signature to the stored counterpart of the document using a device selected from the set consisting of forming a linked directory structure, forming a database, forming a compressed file, and forming a common digital signature packet (Figures 9-1 to 9-3; Column 9, Lines 41-67, Column 10, Lines 1-41. The authenticated electronic

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document depicted in Figures 9-1 to 9-3 forms a common digital signature packet comprising the encrypted signature and the authenticator identification envelope.).

With regards to Claim 24, arguments analogous to those presented for Claims 17 and 18 are applicable to Claim 24. Romney et al further disclose decrypting the electronic signature using the encryption key, thereby electronically binding the electronic signature to a stored counterpart of the document (Figure 2, Steps 240 and 270; Column 8, Lines 34-39; Column 8, Lines 62-67).

11. Claims 9-11 and 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Beatson et al (U.S. 5,892,824) in view of Howbrook (U.S. 4,240,065).

Regarding Claim 9, Beatson et al do not disclose the system of Claim 1, wherein the graphic tablet includes the clock circuit. Howbrook disclose a position sensing apparatus for signature verification wherein the graphic tablet includes the clock circuit (Figure 7, Column 4, Lines 41-43; Column 5, Lines 14-21, Example I). It would have been obvious to a person of ordinary skill in the art at the time the invention was made to modify Beatson et al invention according to the teachings of Howbrook to include the clock circuit in the graphic tablet because it will reduce space requirement and will reduce interconnection hardware.

Regarding Claim 10, Beatson et al do not specifically disclose the system of Claim 9, wherein the time intervals are not greater than 20 milliseconds. The Examiner takes official notice that specific values of time intervals in a clock circuit will be selected based on the discretion of designers or implementers. It would have been obvious to a person of ordinary skill in the art at

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the time the invention was made to select the time intervals in a clock circuit not greater than 20 milliseconds because it is a reasonable upper limit for clock time interval based on the writing dynamics in signature verification.

Regarding Claim 11, Beatson et al do not specifically disclose the system of Claim 10, wherein the time intervals are between 2 milliseconds and 3 milliseconds. The Examiner takes official notice that specific values of time intervals in a clock circuit will be selected based on the discretion of designers or implementers. It would have been obvious to a person of ordinary skill in the art at the time the invention was made to select the time intervals in a clock circuit between 2 milliseconds and 3 milliseconds it is a practical clock time interval based on the writing dynamics in signature verification.

Regarding Claim 13, Beatson et al further disclose the system of Claim 9, wherein the means for verifying the time intervals comprises

- (a) the clock circuit having a certified unalterable time interval (Figure 5, 12 MHZ Oscillator 222);
- (b) the tablet being implemented for transmitting an encoded certification stamp with the coordinate data (Figure 7, Encryption Block 310; Column 14, Lines 65-67, Column 15, Lines 1-11); and
- (c) the computer being programmed for decoding the certification stamp to verify use of the certified time interval (Figure 8; Column 15, Lines 12-42).

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12. Claim 12 is rejected under 35 U.S.C. 103(a) as being unpatentable over Beatson et al (U.S. 5,892,824) further in view of Howbrook (U.S. 4,240,065) and Howell et al (U.S. 5,226,091).

Regarding Claim 12, neither Beatson et al nor Howbrook specifically disclose the system of Claim 9, wherein the means for verifying the time intervals comprises the computer being programmed for determining a ratio of a total elapsed time of the measurements and a total number of the measurements, and comparing the ratio with the predetermined interval. Howell et al disclose a method for signature verification comprising a computer being programmed for determining a ratio of a total elapsed time of the measurements and a total number of the measurements, and comparing the ratio with the predetermined interval (Column 8, Lines 54-68. A ratio of the number of pulses (measurements) and the total elapsed time has been used in analysis for signature verification.). It would have been obvious to a person of ordinary skill in the art at the time the invention was made to modify Beatson et al and Howbrook combination according to the teachings of Howell et al to program the computer for determining a ratio of a total elapsed time of the measurements and a total number of the measurements, and comparing the ratio with the predetermined interval because this is a conventional analysis routinely implemented in statistical procedures and Markov modeling.

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Allowable Subject Matter

13. Claims 29 and 30 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Claim 29 recites the method of Claim 28 comprising, for each of the graphic counterparts the further steps of:
determining at least one measurement parameter relative to the line segment at which the cursor is located; and displaying a digital representation of the parameter.

Claim 30 recites the method of Claim 29, wherein the at least one measurement parameter is selected from the group consisting of a point number, a stroke number, an acceleration value, and a pressure value.

The features identified in Claims 29 and 30 in combination with the other elements of the base claims are neither discussed nor suggested by the prior arts of record.

Other prior art cited

14. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

U.S. Patent 5,850,451 to Sudia is cited for an enhanced cryptographic system and method with key escrow feature.

U.S. Patent 6,021,202 to Anderson et al is cited for a method and system for processing electronic documents.

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U.S. Patent 5,995,084 to Chan et al is cited for a touchpad pen-input and mouse controller.

Contact Information

15. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Mehrdad Dastouri whose telephone number is (703) 305-2438.

The examiner can normally be reached on Monday through Friday from 8:00 a.m. to 4:30 p.m. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Amelia

Au, can be reached at (703)308-6604.

Any response to this action should be mailed to:

Commissioner for Patents and Trademarks
Washington, D.C. 20231

or faxed to:


(703) 308-9051, or (703) 308-9052 (for *formal* communications; please mark "EXPEDITED PROCEDURE")


or:

(703) 306-5406 (for *informal* or *draft* communications, please label "PROPOSED" or "DRAFT")

Hand delivered responses should be brought to Crystal Park II, 2121 Crystal Drive, Arlington, VA., Sixth Floor (Receptionist).

Any inquiry of a general nature or relating to the status of this application should be directed to the Group Receptionist whose telephone number is (703)305-3900.


Mehrdad Dastouri
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July 20, 2000


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